

165 watt photovoltaic module

BP 3165

The BP 3165 is an advanced 165 watt module utilising anti-reflective coatings on both its multicrystalline cells and glass. The module also features IntegraBus™ technology which is a printed circuit board with integrated diodes that has been designed to ensure reliability whilst conducting higher currents. The BP 3165 has been designed for grid-connected solar applications, such as large commercial roofs, residential systems and photovoltaic (PV) power plants, as well as remote off-grid applications such as telecommunications, water pumping and residential systems. This 72-cell module offers superior value – greater performance from a white polyester back-sheet and innovative, high-efficiency cells.

Performance	BP 3165	BP 3160
Rated power	165W	160W
Power tolerance	±3%	±3%
Nominal voltage	24V	24V
Warranty *	90% of minimum warranted power output over 12 years 80% of minimum warranted power output over 25 years Free from defects in materials and workmanship for 5 years	

Configuration

BP 3165N	Universal frame, a sealed junction box with output cables and polarised Multicontact (MC III) connectors.
BP 3165J	Universal frame with an accessible junction box for cable connection.

Qualification test parameters

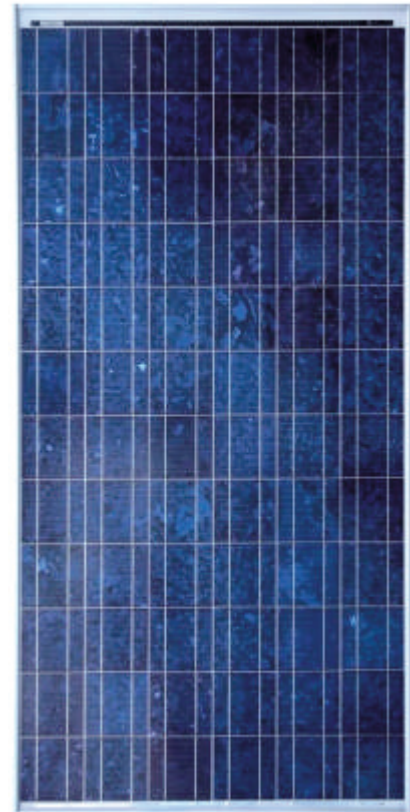
Temperature cycling range	-40°C to +85°C
Damp heat test	85°C and 85% relative humidity
Front and rear static load test (eg: wind)	2400Pa (equivalent to 245kg/m ² load distributed)
Front load test (eg: snow)	5400Pa [†] (equivalent to 550kg/m ² load distributed)
Hailstone impact test	25mm hail at 23m/s
Impulse voltage test	8000V waveform impulse according to high voltage test techniques IEC60060-1 standard
Reverse current overload test	135% of the overcurrent protection rating for two hours

Quality and safety

- Certified according to the extended version of the IEC 61215:2005 (crystalline silicon terrestrial photovoltaic modules – design qualification and type approval).
- Certified according to IEC 61730-1 and IEC 61730-2 (photovoltaic module safety qualification, requirements for construction and testing).
- Listed by Underwriter's Laboratories for electrical and fire safety (Class C fire rating).
- Approved by Factory Mutual Research in NEC Class 1, Division 2, Groups C and D hazardous locations (BP ####J).
- Module electrical measurements are calibrated to world radiometric reference via third party international laboratories.
- Manufactured in ISO 9001 and ISO 14001 certified factories.

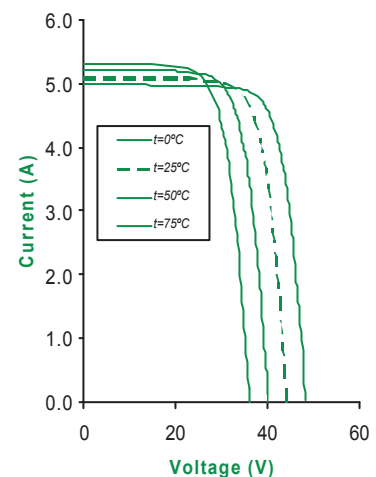
* Refer to BP Solar's warranty document for terms and conditions.

† When module mounted in accordance with BP Solar's installation instructions.



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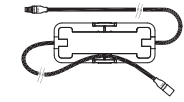
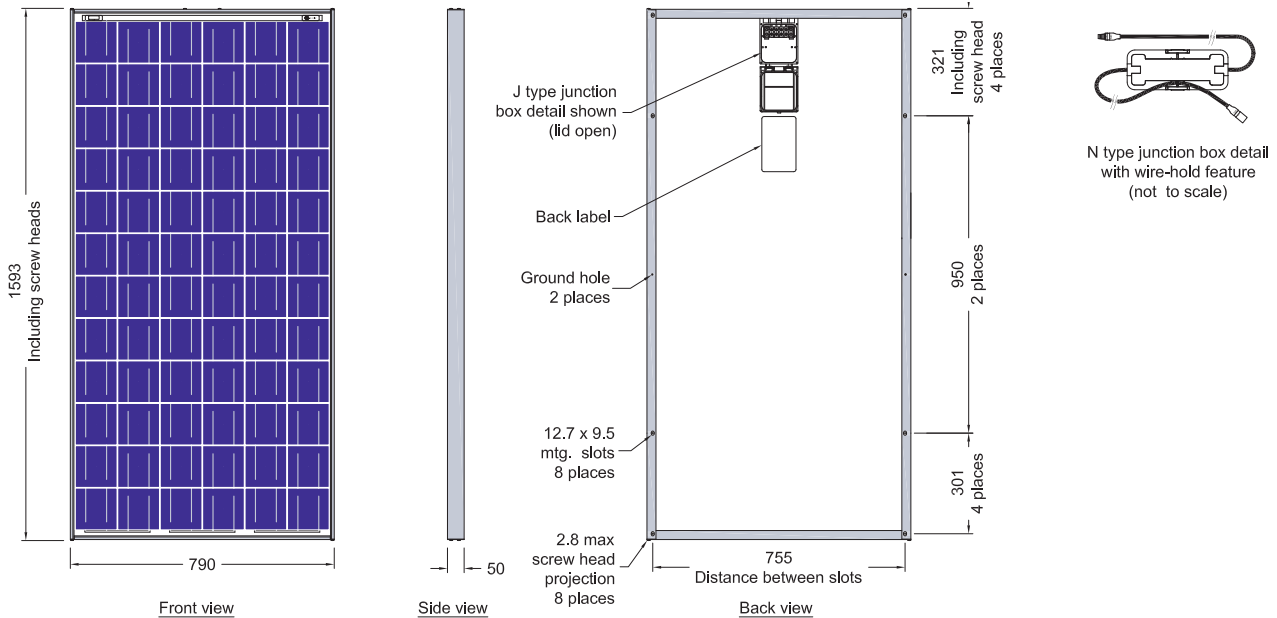
BP3165 I-V Curves



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Module diagram



N type junction box detail with wire-hold feature (not to scale)

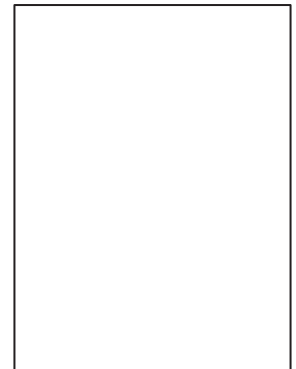
Typical electrical characteristics

	BP 3165		BP 3160	
	(STC) ¹	(NOCT) ²	(STC) ¹	(NOCT) ²
Rated power (P _{max})	165W	119W	160W	115W
Voltage at P _{max} (V _{mp})	35.2V	31.3V	35.1V	31.2V
Current at P _{max} (I _{mp})	4.7A	3.8A	4.55A	3.6A
Short circuit current (I _{sc})	5.1A	4.1A	4.8A	3.9A
Open circuit voltage (V _{oc})	44.2V	40.2V	44.2V	40.2V
Limiting reverse current	5.1A		4.8A	
Module efficiency at STC	13.1%		12.7%	
Efficiency reduction at 200W/m ²	< 3%			
Temperature coefficient of I _{sc}	(0.065±0.015)%/°C			
Temperature coefficient of V _{oc}	-(0.36±0.05)%/°C			
Temperature coefficient of P _{max}	-(0.5±0.05)%/°C			
NOCT ³	47±2°C			
Maximum series fuse rating	15A (BP #####N) / 20A (BP #####J)			
Application class	Class A installation (IEC 61730)			
Maximum system voltage	1000V (IEC 61730) 600V (UL)			

Mechanical characteristics

Solar cells	72 multicrystalline cells (125 x 125mm) connected in series.
Construction	Front: high transmission 3.2mm tempered anti-reflective coated glass. Encapsulant: EVA. Rear: white polyester.
Frame	Clear anodised aluminium, alloy type 6063T6. Colour: silver.
Diodes	IntegraBus™ technology includes 3 Schottky bypass diode – one for every 24 cells – on a printed circuit board.
Output cables (N type)	RHW AWG# 12 (3.3mm ²) cable with polarised weatherproof DC-rated MC III connectors; asymmetrical lengths 1250mm (-) and 800mm (+).
Junction box (J type)	IP65 junction box with four terminal screw connection block, accepts PG 13.5, M20, 13mm conduit, or cable fittings accepting 6 – 12mm diameter cable. Terminals accept 2.5 – 10mm ² (8 to 14 AWG) wire.
Dimensions	1593 x 790 x 50mm (overall tolerances ±3mm)
Weight	15.4kg

Your BP Solar Dealer:



1. Standard test conditions (STC), irradiance of 1000W/m² at an AM1.5G solar spectrum and a cell temperature of 25°C.
2. 800W/m², NOCT, AM 1.5G solar spectrum.
3. Normal operating cell temperature (NOCT) air temperature of 20°C; irradiance 800W/m²; wind speed 1m/s.